Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Previously Presented) A method for simulating a manufacturing facility, comprising the steps of: (1) selecting a sequence of unit operations wherein each of said sequence of unit operations has an identifier code; (2) selecting a set of scheduling cycles for each of said sequence of unit operations; (3) referencing a table using said identifier code to obtain operational parameters for each of said sequence of unit operations; (4) generating a block flow diagram using said sequence of unit operations and said operational parameters; and (5) generating a process time line using said operational parameters, said block flow diagram, said set of scheduling cycles for each of said sequence of unit operations, wherein said process time line is used for facility design.

2. (Cancelled)

3. (New) The method of claim 1, wherein the manufacturing facility is a biopharmaceutical processing facility.

4. (New) The method of claim 1, further comprising defining a Current Critical Path Start time (CCPS), wherein said CCPS is the start time for a first unit operation execution task in a current unit operation being evaluated by a scheduling procedure.

5. (New) The method of claim 4, further comprising (1) defining a batch

cycle as a set of two or more unit operations that cycle together as a subset of a process cycle, wherein said process cycle includes unit operations that generate crude product, (2) determining a batch cycle offset for scheduling unit operations and their respective tasks associated with a batch cycle, and (3) applying said batch cycle offset to a CCPS associated with each said unit operation in order to schedule said tasks within said process time line if said unit operation is part of said batch cycle.

6.   (New) The method of claim 5, further comprising (1) defining a cluster cycle as a set of two or more unit operations that cycle together within a batch cycle, (2) determining a cluster cycle offset for scheduling two or more unit operations and their respective tasks associated with a cluster cycle, and (3) applying said cluster cycle offset to a CCPS associated with each said unit operation in order to schedule said tasks within said process time line if said unit operation is part of said cluster cycle.

7.   (New) The method of claim 6, further comprising (1) defining a unit operation cycle within a cluster cycle or a batch cycle, (2) determining a unit operation offset for scheduling said one or more tasks associated with a unit operation cycle, and (3) applying said unit operation offset to a CCPS associated with each said unit operation in order to schedule said tasks within said process time line if said unit operation is part of said unit operation cycle.